Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Schools and Libraries Universal Service	)	CC Docket No. 02-6
Support Mechanism	)	
	)	
A National Broadband Plan	)	GN Docket No. 09-51
For Our Future	)	

INITIAL COMMENTS OF THE CHESTER COUNTY INTERMEDIATE UNIT
IN RESPONSE TO MAY 20, 2010 NOTICE OF PROPOSED RULEMAKING

The Chester County Intermediate Unit is a public educational service agency (ESA) serving the 12 public school districts of Chester County, Pennsylvania. Located in southeastern Pennsylvania, the schools of Chester County serve approximately 71,495 students in grades K - 12. The school districts range in size from an enrollment of 2,829 students to an enrollment of 12,503. The average enrollment for all 12 school districts in Chester County is 5,914 students.

Chester County, Pennsylvania covers 756 square miles and is located approximately 25 miles southwest of Philadelphia. It borders both Maryland and Delaware. Although the county is considered one of the most affluent in Pennsylvania, almost six percent of the residents fell below the poverty level in 2008 according the US Census Bureau. Southern Chester County

serves as home for many children of migrant agricultural workers employed by the mushroom farms that are a vital part of the Chester County economy.

The schools of Chester County have benefitted greatly over the years from the E-Rate program and numerous state and federal grants. The E-Rate program has enabled every school district in the county to establish and maintain broadband connectivity. State grants, such as the Pennsylvania Department of Education's Classrooms for the Future initiative, have provided schools with state-of-the-art computers, interactive white boards, software and high-quality professional development opportunities. Teachers have embraced these powerful resources and have integrated them extensively into their instruction.

Unanticipated Consequence of E-Rate's Success

While the E-Rate program has been extremely effective in leveling the playing field for schools regardless of their socio-economic status, it has precipitated an unanticipated inequity that must now be addressed. Because of the technological advances that the E-Rate program has made possible, teachers in Chester County now use Course Management Systems (CMS) such as Blackboard or Moodle to supplement their instruction. Students access these systems to download assignments, participate in group activities, take assessments and upload homework. Every school district in Chester County now has access to a large video-on-demand library that includes instructional videos that are aligned to the state standards. Since these videos may be accessed by students from any location with a broadband connection, many teachers assign them for homework rather than using valuable class time to view them. Students are then expected to come to class prepared to discuss them.

School districts have also taken advantage of the robust technological infrastructure made possible by the E-Rate program to improve communication with parents. Most school districts now maintain student information systems that provide parents with up-to-date information about their student's grades, assignments and attendance. This allows parents who may not be available to meet with teachers on a regular basis the ability to stay connected and support their child's education more effectively.

In a recent survey of elementary school parents, one Chester County school district found that 19% did not have Internet connectivity in the home. While the magnitude of this digital divide varies across the county, every district has some students who are at a disadvantage because they lack broadband connectivity to their home. If this is a problem in a relatively wealthy area such as Chester County, the magnitude in less affluent and rural areas must be severe.

If America is to be competitive in the global economy, we know that learning cannot be restricted to the brief amount of time that students spend in school each day. While no one can deny the wonderful benefits made possible by the E-Rate program, for those without broadband in the home it has actually exacerbated the digital divide.

The Final Step Towards Equity

School districts throughout Chester County seek to meet the needs of every child. With a few revisions to the current rules governing the E-Rate program this could be possible. The FCC recommended in the May 20 NPRM to make E-Rate funding available for wireless Internet access service used with portable learning devices that are used off school premises. The Chester County Intermediate Unit strongly supports this proposal and agrees that the

requirements set forth in the Children's Internet Protection Act (CIPA) must apply to the off-campus access.

However, we also support two other measures that could also meet this goal of providing students without home broadband access that were not mentioned in the NPRM:

1. Where possible, allow districts to extend their networks through wireless or other technologies to allow economically disadvantaged students to access them from home. This proposal would have no financial impact on the E-rate fund but would provide districts with permission to use their excess bandwidth after school hours. Districts would be responsible for ensuring that district-supplied laptops could only access the district's network.

This could be accomplished by simply mounting external antennas for wireless access points in the school buildings, turning the schools into Wi-Fi hotspots serving the immediately surrounding neighborhood. The reach of these omnidirectional antennas could be extended by mounting them on towers to increase the local coverage area.

Or, wireless student access could be achieved in another, albeit more complex, method, by deploying wireless access points all around a community to achieve saturation coverage. Connections from the wireless access points could feed back to a router or switch that aggregates wireless service. These aggregating routers or switches could be located at the strategic community locations (such as police stations, government offices, etc.) to minimize the costs of back-hauling the wireless access point connections to the nearest school; and would themselves be connected back to the nearest school using leased lines, fiber optic cable, or point-to-point wireless connections. The school would continue to be the distribution point for Internet access to the students' laptops.

In either scenario, we believe the school district's network access could be made very secure. Effective basic wireless security consists of a combination of tactics: non-broadcast of the network's Service Set Identifier (SSID); Media Access Control (MAC) address verification; and Wi-Fi Protected Access (WPA2 or IEEE 801.11i standard) encryption. These will prevent all but the most tech-savvy unauthorized user from connecting.

Wireless security could be made even more rigorous by using IEEE 802.1x port-based network access control, which provides per-user, per-session, mutual strong authentication, not only for wireless networks but also for wired networks. Together with the measures outlined above, this would limit wireless use to only authorized users.

Authorized wireless users would have a district-provided laptop manually configured with the appropriate SSID. Their laptop's wireless MAC address could be registered in the school or district wireless access controller's database, to be allowed to use the network. Their laptop would be configured with the appropriate codes for encrypted communications between it and the nearest wireless access point. And the user would have a unique name and password to authenticate and permit their use of the network.

Once connected, the authorized wireless users would be essentially channeled onto a dedicated virtual local area network (VLAN) on the school's network that would ultimately direct Internet access through the school's or district's content filtering systems. This would allow the users to access appropriate educational resources locally, as well as education-related content over the Internet, at broadband speeds.

2. Where extending the district network is not possible, allow districts to purchase broadband service through the normal competitive bidding process to provide connectivity for economically disadvantaged students enrolled in their schools.

To minimize impact on the E-rate fund, we support a limited three-year pilot program eligible only to students who qualify for the National School Lunch Program and who have proven that no broadband access exists in the home. Further, we believe that eligibility should be strictly limited to educational entities that can prove they have an existing online curriculum where home broadband access is required, and that the district has the existing computer and network resources to undertake such an initiative and be in a position to provide real-time feedback to the FCC during the pilot phase.

These changes to the E-Rate program would substantially extend learning opportunities for students most in need and would represent the final step in eliminating the digital divide.

Respectfully submitted,

/s/ John P. Branson

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